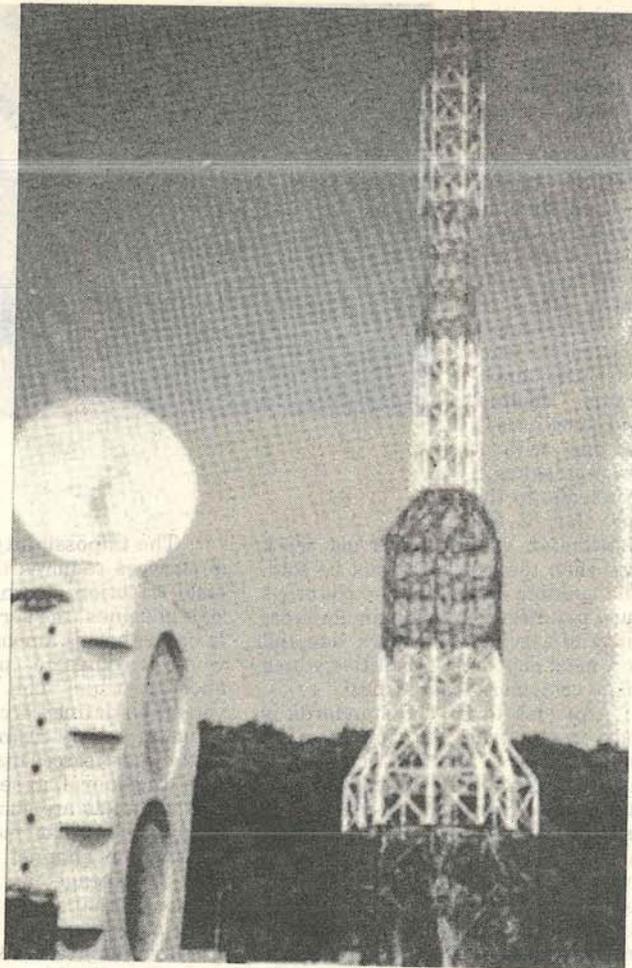


INFORMATION TECHNOLOGY



IN VIETNAM

WHERE TO START?

In plans for developing information technology at national or local levels, we saw that stress was put on the application of this technology, and the production of computer and its parts was barely mentioned. In different information workshops, there was a paradox that those who had limited knowledge of information technology often declared that Vietnam could produce computer, espe-

cially its software, whereas the opinion of most experts in informatics was against it, many experts also said that it's impossible to produce computer (software) in Vietnam, because if a Vietnamese expert could invent something and was feeling his way to perfect it, his invention was materialized in new product by other countries. Anything about computer software a Vietnamese expert was

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thinking of, it was also studied or realized by at least hundreds of American or some dozens of Japanese or European people (because their armies of information expert were much more abundant than ours). Of course there are some problems that are specific to Vietnam only, but the community of Vietnamese expatriates certainly has more ability than us to study and experiment with them. As for production of computer software, it's easier said than done.

In this article, we want only to discuss the application of information technology in Vietnam.

1. Challenge of the information technology to developing countries

One of challenges issued to developing countries is that they can't integrate into the world market and develop if they fail to apply the information technology successfully to their economies. Moreover, the information technology is a product of development, and for development, of rich countries. Its progress is so fast that developing countries can't afford the time and money to keep abreast of, therefore they usually become markets for informatics multinationalals.

However, poor countries will be able to cope with this challenge and develop the information technology by taking the following measures:

- Finding the best way to apply informatics effectively to the economy.

- Slowing down the development of information technology in domestic economy in comparison with developed ones.

- Poor countries should have rights to consume locally-made computers (of course on condition that they are marketable).

- Among poor countries there must be some pioneers who can keep pace with development of information technology in the world.

- Making the best use of all opportunities to enter international computer market in order to secure a source of foreign exchange...

2. Developing the information technology by applying or producing it?

As stated above, the stress was put more on the application than on the production of this technology. There are a lot of arguments for this situation, the following are some of them:

- Application of informatics is of greater importance to our existing situation. To apply it effectively is an indispensable condition for our integration into the world economy.

- To apply the information tech-

nology is a difficult, but very feasible, job, whereas production of information technology is of great importance, but we have no ability to do it now, so we have to watch our step.

- Generally, application of this technology is easier and cheaper than production of it.

- Application of informatics is more urgent to our economy than products of information technology, because we can easily buy these products from foreign markets, while information needed for our economic development (produced by the application of informatics) couldn't be found in foreign markets.

All these arguments are right. Moreover, we must recognize that no nation refuses to develop its own information technology. However, at present, we see no sign of a local information industry although the informatics has been introduced to Vietnam for years. So we can only discuss the production of informatics products when such an industry comes into being.

3. Production of software in Vietnam

Let's compare a plan for producing software and a plan for applying in informatics in order to make choice between "keeping the last niche in domestic market" and "making a start on the development of local information industry":

Objectives	Production of software	Application of informatics
	To build a center of 50 experts to meet domestic demand and do subcontract work for foreign companies	To build a well-organized system of information controlling about 50,000 subjects (similar to the system controlling factories in HCMC)
Estimated starting capital	US\$1 million for construction in 3 years	US\$300,000 from start and US\$100,000 for the following year
Production cost since the fourth year	US\$350,000	US\$50,000
Income since the 4th year	US\$500,000	US\$10,000
Profit	US\$150,000	US\$40,000
Social effect	Forming a small productive force in high technology	Producing great effects on social management and macro-economic management
Difficulties	Training an small army of skilled experts Expanding ability to exchange information with foreign centers.	Training a large army of laborers Building legal infrastructure for information exchange
Risk of bankruptcy.	Small in spite of poor organization	Big if the organization is poor.

Now we can discuss the formula they couldn't undertake these projects to develop local applied software. In fact, some projects completely. In fact, some projects

the applicable software made and consumed by Vietnamese, the formula will be "Vietnam -> Vietnam". If a foreign partner takes part in production of this software, the formula will be "Vietnam + Foreigner -> Vietnam". When foreign consumers buy this software, the formula will be "Foreigner + Vietnam -> Foreigner".

Those two markets enable us to form the following estimate:

Capital invested per year (US\$ m.)	1996 - 1997	1998	1999	2000
Vietnam 240	40 - 50	40	60	90
Foreigner 104	20	20	30	45

With such a market of local applied software, the local investment of US\$240 million could be divided into two parts: US\$80 million in small-scale application and US\$160 million in large-scale application:

Capital	1996 - 1997	1998	1999	2000
80	15 - 20	15	20	30
160	25 - 30	25	40	60

In this aspect, if no appropriate policy is adopted, local software companies can only take part in 80 - million - dollar projects for small-scale application. In poor condition,

jects for small-scale application within reach of local companies have fallen into foreign companies' hands for many reasons.

In order to develop the market for local applied software, we suggest the following:

- The feasibility study of all government-financed plan for applying informatics must be done before the plan realization is put out to tender.

- Tax incentives could be offered

to software companies because present policy of the government is to encourage high-tech industry. So it's reasonable to give tax exemption to software companies for the first five years, collect 2% of their sales in the second five years and 4% of their sales from the third five years on.

- Software companies usually consist of a number of promising youths gathering round some prestigious experts. All of them are badly in need of investment and training courses before they can work in a team. Thus, the Government had better supply interest-free loans of two-year maturity to these companies (a software company with personnel of 15 persons needs some VND2 billion in the first two years). In 1996, we suggest that the Government had better allocate an outlay of VND50 billion to help some 50 software companies take shape. This outlay should be increased in following years. We believe that after five years, in Vietnam, there will be a group of software companies of small and medium scale, and many of them would gain a foothold in foreign markets.

- The Government should enforce the copyright law. A national commission of information technology development and a commission of local informatics industry should be established and assigned this task.

- There must be a regulation forcing foreign companies tendering for projects of informatics application in Vietnam to cooperate with local software companies and these foreign companies should verify their ability to cooperate and carry out projects they want to undertake.